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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,381	10/16/2003	Yuri Ton	26930	9767

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EXAMINER

GELLNER, JEFFREY L

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/685,381	Applicant(s) TON ET AL.	
	Examiner Jeffrey L. Gellner	Art Unit 3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 6, 8-10, and 14-16 are rejected under 35 U.S.C. §102(b) as being anticipated by Hall III (US 4,015,366).

As to Claim 1, Hall III discloses a system for remote monitoring (abstract) of a field crop (col. 14 lines 50-55 with use of term “field”) comprising at least one sensor (col. 15 lines 34-42 and lines 61-63) positionable on a plant of the crop (in that sensor is capable of being placed on the crop) for collecting at least one plant derived parameter (in that nutrient concentration levels in the soil will be determined by withdrawal rate of the plant(s)); at least one user client (computer of Fig. 1) being for receiving and optionally processing the data for the at least one sensor to thereby determine a state of the crop; and a communication network (18 of Fig. 1) for communicating data from sensors to user client.

As to Claim 2, Hall III further discloses an additional sensor for soil moisture (col. 15 lines 34-43).

As to Claim 3, Hall III further discloses a sensor for CO₂ (col. 15 lines 34-43).

As to Claims 5, 6, and 8, Hall III further discloses the at least one sensor with a transmitter and receiver - satellite (inherent in use of “satellite” of col. 18 line 5).

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As to Claim 9, Hall III further discloses the communication with wire and wireless communications (inherent in use of "satellite" of col. 18 line 5).

As to Claim 10, Hall III further discloses at least one sensor including a plurality of sensors (in that several would be in the field).

As to Claim 14, Hall III further discloses a computer (Fig. 1).

As to Claims 15 and 16, Hall III further discloses the at least one device in communication with the user client via a communication network (Fig. 1) and the at least one device being for modifying the state of the plant - irrigation (part 4 or abstract).

Claim Rejections - 35 USC §103

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 and 7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hall III (US 4,015,366) in view of JP59-38655.

As to Claim 4, the limitations of Claim 1 are disclosed as described above. Hall III further discloses at least one additional environmental sensor - soil temperature detector (col. 15 lines 34-42) and plant mounted sensor (abstract). Not disclosed is one of the listed sensors as plant-mounted. JP59-38655, however, discloses a plant mounted CO₂ detector (Fig. 4 and abstract in English; plant mounted in that detector is mounted on "LF" in Fig. 4). It would have

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been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hall III by adding a plant mounted CO₂ detector so as to ensure optimum plant growth.

As to Claim 7, the limitations of Claim 1 are disclosed as described above. Not disclosed is a data storage device on the sensor. Examiner takes official notice that it is old and notoriously well known in the sensor art to have a sensor with a data storage device. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hall III by adding a data storage device to the sensor so as to store data before sending so as to increase efficiency of transmission.

Response to Arguments

Applicant's arguments filed 14 March 2005 have been fully considered but they are not persuasive. The crux of Applicant's argument are: (1) The placement of one of Hall III's sensors is neither relevant nor consistent with the teachings of Hall III (Remarks page 5 2nd to last para.); (2) nutrient concentrations in the soil can not be determined by a plant derived parameter (Remarks bottom of page 5 top and middle of page 6; page 11 last para.); (3) the instant invention measures manifestations of plant status while Hall III measures plant behavior (Remarks page 7 1st para.; page 9 1st para.); (4) in the instant application the plant's status is measured directly from data output while Hall III generates "signatures" and "templates" (Remarks page 8 1st para.); (5) Hall III does not disclose an additional sensor for soil moisture in that all sensors are primary (Remarks page 8 2nd para.); (6) Hall III does to anticipate the language of claim 3 (Remarks page 10 2nd complete para.); and, (7) one of ordinary skill would

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not be motivated to modify the system of Hall III with the carbon dioxide detector of Takayama et al. (page 12 3rd complete para.).

As to argument (1), Examiner considers the placement of one of Hall III's sensors a possibility (and therefore, a capability) because of the language in the abstract of "direct sensing means are generally ground or plant mounted."

As to argument (2), Examiner considers a "plant-derived parameter" to be one that is inferred or deduced from the plant (see definition of derive from Merriam-Webster's Collegiate Dictionary at page 311). Although nutrient concentration in the soil may be effected by many variables (as pointed out by Applicant), nutrient concentration is still a function of plant uptake. Hence, nutrient concentration in the soil is a "plant-derived parameter."

As to argument (3), Examiner considers the soil's nutrient concentration to measure the plant's status because a plant that manifests drought stress or disease will not have a rapid growth rate which will be reflected in lower nutrient uptake from the soil.

As to augment (4), the instant claim language does not claim assessing the plant's status directly from the data.

As to argument (5), Examiner considers Hall III to disclose a plurality of sensors at col. 15 lines 34-43. Any one sensor "picked" at random is considered to be primary by virtue of it being "picked." The other sensors are then considered secondary, or additional.

As to argument (6), Examiner considers the language of "carbon dioxide" of Hall III at col. 15 line 38 to disclose the limitation of Applicant's claim 3.

As to argument (7), Examiner considers the modification of Hall III by JP59-38655 to be proper because both references deal with assessing plant derived parameters.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ioslovich et al., Ehler et al., Testezlaf et al., Jones et al., Gauthier, Seginer, Fisher et al, and Vollebregt disclose in the prior art various systems with sensors to monitor plant-derived parameters.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

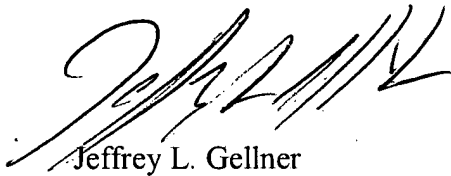
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeffrey L. Gellner whose phone number is 571.272.6887. The Examiner can normally be reached Monday through Thursday from 8:30 am to 4:00 pm. The Examiner can also be reached on alternate Fridays.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Peter Poon, can be reached at 571.272.6891. The official fax telephone number for the Technology Center where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrey L. Gellner
Primary Examiner